



Analytical Laboratory

Page 1 of 16

13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: J11090330

Customer Name(s): Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Jason C Perkins **Phone:** 980-875-5348

Report Authorized By: _____ **Date:** 10/10/2011
(Signature)

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Page 2 of 16

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2011020567	BELEWS	28-Sep-11 7:31 AM	TO	FGD Purge Eff
2011020570	BELEWS	28-Sep-11 7:55 AM	TO	EQ TANK EFF.
2011020571	BELEWS	28-Sep-11 7:51 AM	TO	BIOREACTOR 1 INF.
2011020572	BELEWS	28-Sep-11 7:49 AM	TO	BIOREACTOR 2 INF.
2011020573	BELEWS	28-Sep-11 7:43 AM	TO	BIOREACTOR 2 EFF.
2011020574	BELEWS	20-Sep-11 10:50 AM	L.DAVIS	FILTER BLANK
2011020575	BELEWS	20-Sep-11 10:50 AM	L.DAVIS	Trip Blank
7 Total Samples				

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).

☒ Yes

☐ No

All Results are less than the laboratory reporting limits.

☐ Yes

☒ No

All laboratory QA/QC requirements are acceptable.

☒ Yes

☐ No

The Vendor Laboratories have been qualified by the Analytical Laboratory

Yes

Report Sections Included:

☒ Job Summary Report

☒ Sample Identification

☒ Technical Validation of Data Package

☒ Analytical Laboratory Certificate of Analysis

☐ Analytical Laboratory QC Report

☒ Sub-contracted Laboratory Results

☐ Customer Specific Data Sheets, Reports, & Documentation

☐ Customer Database Entries

☒ Chain of Custody

☒ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: DataBase Administrator

Date: 10/10/2011

Certificate of Laboratory Analysis

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Order # J11090330

Site: FGD Purge Eff

Collection Date: 28-Sep-11 7:31 AM

Sample #: 2011020567

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>							
Bromide	89	mg/L		5	EPA 300.0	03-Oct-11 12:25	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	74.7	ug/L		5	EPA 245.1	30-Sep-11 10:22	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	163	mg/L		0.5	EPA 200.7	04-Oct-11 14:00	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	140	ug/L		10	EPA 200.8	30-Sep-11 13:54	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	45.4	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Chromium (Cr)	49.7	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Copper (Cu)	38.7	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Nickel (Ni)	106	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Selenium (Se)	1160	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Silver (Ag)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:15	KRICHAR
Zinc (Zn)	88.9	ug/L		20	EPA 200.8	05-Oct-11 11:15	KRICHAR
<u>SELENIUM SPECIATION</u>							
Vendor Parameter	Complete				V_AS&C		
<u>TOTAL DISSOLVED SOLIDS</u>							
TDS	12000	mg/L		200	SM2540C	30-Sep-11 15:00	CLEEMAN

Site: EQ TANK EFF.

Collection Date: 28-Sep-11 7:55 AM

Sample #: 2011020570

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	112	ug/L		2.5	EPA 245.1	30-Sep-11 10:25	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	160	mg/L		0.5	EPA 200.7	04-Oct-11 14:04	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	126	ug/L		10	EPA 200.8	30-Sep-11 13:58	KRICHAR

Certificate of Laboratory Analysis

Page 5 of 16

*This report shall not be reproduced, except in full.***Order # J11090330**

Site: EQ TANK EFF.

Collection Date: 28-Sep-11 7:55 AM

Sample #: 2011020570

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	42.8	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Chromium (Cr)	48.4	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Copper (Cu)	37.1	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Nickel (Ni)	98.5	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Selenium (Se)	1070	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Silver (Ag)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:18	KRICHAR
Zinc (Zn)	81.9	ug/L		20	EPA 200.8	05-Oct-11 11:18	KRICHAR

Site: BIOREACTOR 1 INF.

Collection Date: 28-Sep-11 7:51 AM

Sample #: 2011020571

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	144	mg/L		0.5	EPA 200.7	04-Oct-11 14:08	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	112	ug/L		10	EPA 200.8	30-Sep-11 14:01	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Copper (Cu)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Nickel (Ni)	19.0	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Selenium (Se)	130	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Silver (Ag)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:22	KRICHAR
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	05-Oct-11 11:22	KRICHAR

SELENIUM SPECIATION

Vendor Parameter Complete V_AS&C

Site: BIOREACTOR 2 INF.

Collection Date: 28-Sep-11 7:49 AM

Sample #: 2011020572

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	143	mg/L		0.5	EPA 200.7	04-Oct-11 14:12	MHH7131

Certificate of Laboratory Analysis

Page 6 of 16

*This report shall not be reproduced, except in full.***Order # J11090330**

Site: BIOREACTOR 2 INF.

Collection Date: 28-Sep-11 7:49 AM

Sample #: 2011020572

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Copper (Cu)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Nickel (Ni)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Selenium (Se)	15.4	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Silver (Ag)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:25	KRICHAR
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	05-Oct-11 11:25	KRICHAR

Site: BIOREACTOR 2 EFF.

Collection Date: 28-Sep-11 7:43 AM

Sample #: 2011020573

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>							
Bromide	87	mg/L		5	EPA 300.0	03-Oct-11 12:41	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	< 1	ug/L		1	EPA 245.1	30-Sep-11 10:27	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	149	mg/L		0.5	EPA 200.7	04-Oct-11 14:16	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Copper (Cu)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Nickel (Ni)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Selenium (Se)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Silver (Ag)	< 10	ug/L		10	EPA 200.8	05-Oct-11 11:28	KRICHAR
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	05-Oct-11 11:28	KRICHAR
<u>SELENIUM SPECIATION</u>							
Vendor Parameter	Complete			V_AS&C			

Site: FILTER BLANK

Collection Date: 20-Sep-11 10:50 AM

Sample #: 2011020574

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	< 1	ug/L		1	EPA 200.8	30-Sep-11 13:02	KRICHAR

Certificate of Laboratory Analysis

Page 7 of 16

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Order # J11090330

Site: Trip Blank

Collection Date: 20-Sep-11 10:50 AM

Sample #: 2011020575

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	< 0.05	mg/L		0.05	EPA 200.7	04-Oct-11 13:37	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Chromium (Cr)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Copper (Cu)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Nickel (Ni)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Selenium (Se)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Silver (Ag)	< 1	ug/L		1	EPA 200.8	05-Oct-11 10:54	KRICHAR
Zinc (Zn)	< 2	ug/L		2	EPA 200.8	05-Oct-11 10:54	KRICHAR
<u>SELENIUM SPECIATION</u>							
Vendor Parameter	Complete				V_AS&C		



**APPLIED SPECIATION
AND CONSULTING, LLC**

18804 Northcreek Parkway Bothell, WA, 98011
Tel: (425) 483-3300 Fax: (425) 483-9818
www.appliedspeciation.com

October 7, 2011

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078
(704) 875-5245

Project: Belews – FGD WWTS Bi-Monthly Sampling (LIMS # J11090330)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation analysis on September 29, 2011. The samples were received on September 30, 2011 in a sealed cooler at 0.7°C. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

A handwritten signature in black ink that reads "Ben Wozniak".

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078

Project: Belews – FGD WWTS Bi-Monthly Sampling (LIMS # J11090330)

October 7, 2011

1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on September 29, 2011. The samples were received on September 30, 2011 in a sealed container at 0.7°C.

The samples were received in a laminar flow clean hood void of trace metals contamination and ultra-violet radiation. Upon reception, the samples were designated discrete sample identifiers. An aliquot of each sample was filtered (0.45µm) and these filtrates were stored in a secure, monitored cryofreezer (maintained at a temperature of -80°C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS).

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-DRC-MS Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into a sealed autosampler vial. No further sample preparation was performed as any chemical alteration of the samples may shift the equilibrium of the system resulting in changes in speciation ratios.

3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of

each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimal interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-DRC-MS All samples for selenium speciation analysis were analyzed by ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS) on October 1, 2011. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic ($\text{pH} > 7$) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a specific reactive gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

4. Analytical Issues

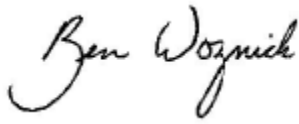
The overall analyses went well and no significant analytical issues were encountered. All sample results have been corrected in accordance with the continuing calibration verification standards to account for perceived instrument drift. All quality control parameters associated with these samples were within acceptance limits, demonstrating the suitability of these corrections.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Ben Wozniak". The signature is written in a cursive, flowing style.

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Selenium Speciation Results for Duke Energy
 Project Name: Belews – FGD WWTS Bi-Monthly Sampling
 Contact: Jay Perkins
 LIMS #J11090330

Date: October 7, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Unknown Se Species (n)
FGD Purge Eff	46.3	93.7	ND (<2.6)	ND (<2.6)	ND (<2.6)	0 (0)
BioReactor 1 Inf	6.16	21.5	ND (<0.65)	ND (<0.65)	ND (<0.65)	0 (0)
BioReactor 2 Eff	0.41	ND (<0.90)	ND (<0.65)	ND (<0.65)	ND (<0.65)	0 (0)
Metals Trip Blk	ND (<0.078)	ND (<0.18)	ND (<0.13)	ND (<0.13)	ND (<0.13)	0 (0)

All results reflect the applied dilution and are reported in µg/L

ND = Not detected at the applied dilution

SeCN = Selenocyanate

MeSe(IV) = Methylseleninic acid

SeMe = Selenomethionine

Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS

n = number of unknown Se species observed

Selenium Speciation Results for Duke Energy
 Project Name: Belews – FGD WWTS Bi-Monthly Sampling
 Contact: Jay Perkins
 LIMS #J11090330

Date: October 7, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Quality Control Summary - Preparation Blank Summary

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL *	eMDL 10x	eMDL 50x	eMDL 200x
Se(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.078	0.39	1.6
Se(VI)	0.000	0.000	0.000	0.000	0.000	0.000	0.018	0.18	0.90	3.6
SeCN	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.13	0.65	2.6
MeSe(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.13	0.65	2.6
SeMe	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.13	0.65	2.6

eMDL = Estimated Method Detection Limit

*Please see narrative regarding eMDL calculations

Quality Control Summary - Certified Reference Materials

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	9.818	102.6
Se(VI)	LCS	9.48	9.601	101.3
SeCN	LCS	8.92	9.194	103.1
MeSe(IV)	LCS	6.47	6.053	93.6
SeMe	LCS	9.32	8.888	95.4

Selenium Speciation Results for Duke Energy
 Project Name: Belews – FGD WWTS Bi-Monthly Sampling
 Contact: Jay Perkins
 LIMS #J11090330

Date: October 7, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Quality Control Summary - Matrix Duplicates

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	FGD Purge Eff	46.3	44.0	45.2	5.1
Se(VI)	FGD Purge Eff	93.7	89.6	91.7	4.4
SeCN	FGD Purge Eff	ND (<2.6)	ND (<2.6)	NC	NC
MeSe(IV)	FGD Purge Eff	ND (<2.6)	ND (<2.6)	NC	NC
SeMe	FGD Purge Eff	ND (<2.6)	ND (<2.6)	NC	NC

ND = Not detected at the applied dilution

NC = Value was not calculated due to one or more concentrations below the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	FGD Purge Eff	1112	1199	103.7	1112	1191	103.0	0.7
Se(VI)	FGD Purge Eff	1009	1112	101.1	1009	1121	102.0	0.8
SeCN	FGD Purge Eff	915.0	910.9	99.6	915.0	904.5	98.8	0.7

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM



Duke Energy Analytical Laboratory

Mail Code MGO3A2 (Building 7405)
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(704) 875-5245
Fax: (704) 875-4349

Analytical Laboratory Use Only

Page 15 of 16

Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

1) Project Name Belews - FGD WWTS Bi-Monthly Sampling)	2) Phone No:
2) Client: Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson **	4) Fax No:
5) Business Unit:	6) Process: Mail Code:
8) Oper. Unit:	9) Res. Type: 10) Reso. Center:

AS&C
PO#133241

Cooler Temp (C)

15 Preserv.: 1=HCL
2=H₂SO₄ 3=HNO₃
4=Ice 5=None

SAMPLE PROGRAM
Water _____ Ground
Drinking Water
RCRA Waste _____

MR #

Customer to complete all
appropriate non-shaded areas.

16 Analyses
Required

17 Comp.

18 Grab

TDS

Hg - 245.1

Br (Dionex)

Metals*

Se, soluble (no dig.)

Se, speciation - vendor to
AS&C (important to place filled
bottle back into both baggies)

LAB USE ONLY

Lab ID

Se Speciation Bottle

ID

13 Sample Description or ID

Date

Time

Signature

Sampling conducted: 2nd and 4th Wednesday

9/28/11	7:31am	TO
9/28/11	7:55am	TO
9/28/11	7:51am	TO
9/28/11	7:49am	TO
9/28/11	7:43am	TO
9/30/11	10:50	Rafasha/Haus
9/30/11	10:50	Rafasha/Haus

Filtering of the Se is performed in the field please provide a filter blank too.

1) Relinquished By <i>[Signature]</i>	Date/Time 9/28/11 8:33am
3) Relinquished By <i>Courier</i>	Date/Time 9/29/11
5) Relinquished By <i>R. Harris</i>	Date/Time 9/29/11 1300
7) Relinquished By	Date/Time
9) Seal/Locked By <i>R. Harris</i>	Date/Time 9/29/11 1300
11) Seal/Locked By	Date/Time

2) Accepted By <i>Courier</i>	Date/Time 9/28/11
4) Accepted By <i>R. Harris</i>	Date/Time 9/29/11 0830
6) Accepted By	Date/Time
8) Accepted By <i>[Signature]</i>	Date/Time 9/30/11 1030
10) Seal/Lock Opened By <i>[Signature]</i>	Date/Time 9/30/11 1030
12) Seal/Lock Opened By	Date/Time

Customer IMPORTANT!
Seal is broken if desired turnaround

22 Requested Turnaround

14 Days _____

*7 Days _____

*48 Hr _____

*Other _____

* Add. Cost Will Apply

Comments

* B by ID

As, Cr, Cu, Ni, Se, Ag, Zn by IMS

Digestions = TRM

thomas.d.johnson@siemens.com

10-6-11

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 16 of 16



Duke Energy Analytical Laboratory

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Fax: (704) 875-4349

Analytical Laboratory Use Only

ORDER# J11090330	MATRIX: OTHER	Samples Originating From NC <input checked="" type="checkbox"/> SC <input type="checkbox"/>
Logged By RA	Date & Time 9/29/11 0905	SAMPLE PROGRAM Water <input type="checkbox"/> Ground NPDES <input type="checkbox"/> Drinking Water <input type="checkbox"/> UST <input type="checkbox"/> RCRA Waste <input type="checkbox"/>
AS&C PO#133241		Cooler Temp (C) 15 Preserv.: 1=HCL 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None

Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

1) Project Name Belews - FGD WWTS Bi-Monthly Sampling)	2) Phone No:
2) Client: Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson **	4) Fax No:
5) Business Unit:	6) Process:
8) Oper. Unit:	10) Reso. Center:

LAB USE ONLY	
11) Lab ID	13) Sample Description or ID
201020567	B12801
70	FGD Purge Eff
71	EQ Tank Eff.
72	B13109
73	BioReactor 1 Inf
74	BioReactor 2 Inf
75	B12784
	BioReactor 2 Eff
	Filter Blk
	B12870
	Metals Trip Blk

Se Speciation Bottle			Sampling conducted: 2nd and 4th Wednesday									
ID	13) Sample Description or ID	Date	Time	Signature	17) Comp.	18) Grab	TDS	Hg - 245.1	Br (Dionex)	Metals*	Se, soluble (no dig.)	19) Se, speciation - vendor to AS&C (Important to place filled bottle back into both baggies)
B12801	FGD Purge Eff	9/28/11	7:31am	TO			1	1	1	1	1	1
	EQ Tank Eff.	9/28/11	7:55am	TO				1		1	1	
B13109	BioReactor 1 Inf	9/28/11	7:51am	TO						1	1	1
	BioReactor 2 Inf	9/28/11	7:49am	TO						1		
B12784	BioReactor 2 Eff	9/29/11	7:43am	TO				1	1	1		1
	Filter Blk	9/29/11	10:50	Rafaela Davis							1	
B12870	Metals Trip Blk	9/29/11	10:50	Rafaela Davis						1		1

Filtering of the Se is performed in the field please provide a filter blank too.

1) Relinquished By <i>[Signature]</i>	Date/Time 9/28/11 8:33am	2) Accepted By <i>Courier</i>	Date/Time 9/28/11
3) Relinquished By <i>Courier</i>	Date/Time 9/29/11	4) Accepted By <i>R. Davis</i>	Date/Time 9/29/11 0830
5) Relinquished By <i>R. Davis</i>	Date/Time 9/29/11 1300	6) Accepted By:	Date/Time
7) Relinquished By	Date/Time	8) Accepted By:	Date/Time
9) Seal/Locked By <i>R. Davis</i>	Date/Time 9/29/11 1300	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By	Date/Time
Comments * B by ICP As, Cr, Cu, Ni, Se, Ag, Zn by IMS Digestions = TRM thomas.d.johnson@siemens.com			

Customer, IMPORTANT!
Please indicate desired turnaround.

22) Requested Turnaround

14 Days _____
*7 Days _____
*48 Hr _____
*Other _____
*Add. Cost Will Apply

10-6-11